

NOTES ON THE FISHES OF THE CHINCOTEAGUE REGION OF VIRGINIA.

BY HENRY W. FOWLER.

Early in May of 1912 I visited the town of Chincoteague, where nearly a week was spent studying and collecting fishes for the Academy. Though many of the species met with were abundant, we secured some of interest, and are thus able to offer in this contribution the first fairly representative account of the fish-fauna of the region.

Chincoteague Island is situated at the lower end of the bay of that name, forming in fact the lower inner face of the great, narrow, sandy barrier-beach of Assateague Island, which is now, however, entirely continuous with Ocean City in Maryland and northward. This barrier-beach, at least north of Assateague Inlet, contains no permanent fresh water its entire extent, or for a distance of about thirty miles. Thus Chincoteague Island, its area extending a little over eight miles north and south, with its greatest width a little over a mile, contains the greatest amount of fresh water to be found in this off-shore region. This is in the form of narrow sloughs or ponds, extending north and south, and usually shallow. They are locally known as glades, and are often broken up in places into smaller bodies of water. The larger glades frequently contain purely fresh water throughout the year, though in places they sometimes dry out through drought or other causes. In color the water is usually dark, still, and sluggish, the first character likely due to the numerous bull pines which grow in many places. Such waters naturally support an abundance of life, as minute crustacea, etc., especially in the pools destitute of fishes. Sometimes a fresh-water glade will be separated from a brackish one having direct egress to the sea, and at the time of high tides the two waters are intermingled. In only one pool of fresh water, though separated by but a few feet of dry land from a brackish-water glade, did we secure fresh-water mollusca and a phyllopod (*Ino holmani*). This pool was also quite interesting as differing from many others examined, in the great diversity of its animal life, such as water asels, fresh-water amphipods, larval dragon-flies, water-striders, and water-boatmen. We did not find *Palamonetes vulgaris* in this locality, though it was common in other

pools on the island, as well as on Assateague. On the latter and on Wallops Island we only found minute crustacea, and no fresh-water mollusks. The Chincoteague mollusca were identified by Mr. E. G. Vanatta as *Lymnaea columella*, *Planorbis alabamensis* and *Musculium partumeium*. The only frog met with was *Rana pipiens*, and these mostly greenish. *Bufo americanus* was abundant, and we also saw a number of *Chelydra serpentina*, *Kinosternon pensylvanicum* and *Chrysemys picta*.

Acknowledgment is due to Mr. T. D. Keim, who assisted me in making the collections.

Mustelus canis (Mitchill).

Abundant. Chincoteague, Assateague and Wallops.

Raja ocellata Mitchill.

Chincoteague and Wallops.

Raja eglanteria Lacépède.

Chincoteague, Assateague and Wallops. This is the most abundant skate.

Acipenser sturio Linnæus.

Chincoteague. A large one brought in.

Pomolobus mediocris (Mitchill).

Chincoteague and Wallops.

Pomolobus pseudoharengus (Wilson).

Chincoteague, Franklin City and Wallops.

Alosa sapidissima (Wilson).

Chincoteague. Several bushels taken in the pounds.

Brevoortia tyrannus (Latrobe).

Franklin City, Chincoteague and Assateague. A number were infested with *Lernæanicus radiatus* (Le Sueur), a lernean parasite. These were usually found hanging from the back and protruding through holes they had bored through their host's flesh. Some were found protruding from the dorsal fins, and one which had imbedded its head under its host's tongue hung down from the chin like a bifurcated barbel. Among fifty or more examples of menhaden, but few were found free of this parasite, and usually several were on a single fish.

Anchovia mitchilli (Valenciennes).

A dead example picked up on Assateague beach.

Fundulus majalis (Walbaum).

Abundant at Chincoteague and Assateague. The most abundant killifish in coves and salt-water bays.

Fundulus heteroclitus macrolepidotus (Walbaum).

Chincoteague, Assateague, Wallops.

Fundulus luciae (Baird).

Found only in the fresh regions of still waters, such as are continuous with brackish waters, on Chincoteague.

Lucania parva (Baird).

A few found on Assateague and Chincoteague. The former were in high color.

Cyprinodon variegatus Lacépède.

Abundant and in high color on Chincoteague and Assateague Islands.

Tylosurus marinus (Walbaum).

One at Franklin City.

Menidia beryllina (Cope).

A few found on Assateague.

Menidia menidia notata (Mitchill).

Common at Assateague and Wallops.

Mugil curema Valenciennes.

Young found in brackish pools and ditches on Assateague.

Gasterosteus aculeatus Linnæus.

First found on Assateague in a large open glade, filled with duckweed for several miles in extent. These little fish were found swarming in myriads, and were uniformly about an inch in length. Some had their ventral membranes bright crimson, and many were slightly variable otherwise in color, though most were more or less brassy or golden. All which we secured were of the mailed type. Associated were a few silversides, killifish, rain-water fish, and pury minnows. The sticklebacks often swim in immense schools and take refuge in the duck grass when disturbed. They are much condemned by persons living on the island who raise ducks, as they are said to cause the death of the young birds in some numbers at times. One man told me he had lost thirty-two young ducks one season, due to the birds swallowing small sticklebacks. Many other complaints were also heard. It seems that in the summer or during drought the small fishes congregate in shallow puddles and being then easily captured they are eagerly devoured by the young ducks. The fish, finding itself a captive, immediately assumes its only defense by locking tightly its

dorsal and ventral spines, lodging in its captor's throat or wind-pipe with fatal effect.

On Chincoteague they were far less abundant.

Syngnathus fuscus (Storer).

A single example seined at Wallops, where it was hauled ashore with bunches of "sea lettuce," and numbers of *Crago septemspinosa*, *Palaemonetes vulgaris*, *Chloridella empusa*, *Eupagurus longicarpus*, *Ovalipes ocellatus* and *Callinectes sapidus*.

Scomber scombrus Linnæus.

Common off Chincoteague Shoals. Many bushels brought into the town.

Pomatomus saltatrix (Linnæus).

Like the last, though only a few brought in. Small ones at Chincoteague and Franklin City.

Poronotus triacanthus (Peck).

Very abundant. Chincoteague.

Roccus lineatus (Bloch).

Several small ones at Chincoteague.

Morone americana (Gmelin).

A few large ones at Franklin City.

Orthopristis chrysopterus (Linnæus).

A few at Chincoteague.

Stenotomus chrysops (Linnæus).

Not many taken at Chincoteague.

Lagodon rhomboides (Linnæus).

One at Chincoteague.

Cynoscion regalis (Schneider).

Franklin City, Chincoteague, Wallops. Common.

Cynoscion nebulosus (Cuvier).

Chincoteague and Wallops. A few.

Bairdiella chrysura (Lacépède).

Common. Chincoteague, Franklin City and Wallops.

Sciænops ocellatus (Linnæus).

Several large ones at Chincoteague.

Micropogon undulatus (Linnæus).

Very common. Chincoteague, Franklin City and Wallops.

Menticirrhus saxatilis (Schneider).

Common. Chincoteague, Franklin City, Wallops.

Pogonias cromis (Linnæus).

One small example at Chincoteague.

Tautoga onitis (Linnæus).

One, at Chincoteague.

Spheroides maculatus (Schneider).

Very common at Chincoteague, Assateague, Wallops and Franklin City.

Prionotus carolinus (Linnæus).

Chincoteague and Wallops.

Prionotus evolans strigatus (Cuvier).

Common. Chincoteague.

Lophopsetta maculata (Mitchill).

Chincoteague, Wallops, Franklin City.

Etropus microstomus (Gill).

One adult of this interesting little fish, which has not certainly been secured outside of New Jersey before, was seined at Wallops beach. Mr. T. M. Milliner, who was with us when this specimen was secured, tells me that it is occasionally taken in Watchapeague Inlet.

Paralichthys dentatus (Linnæus).

Chincoteague, Franklin City and Wallops.

Pseudopleuronectes americanus (Walbaum).

Chincoteague and Wallops.

Achirus fasciatus (Lacépède).

Common at Chincoteague.

Astroscopus guttatus (Abbott).

A large example at Chincoteague.

Urophycis regius (Walbaum).

Several small ones seined at Wallops.